

ABSTRACT OF THE DISCLOSURE

An agitation type powder dissolving apparatus for reprocessing spent nuclear fuel is provided. The apparatus comprises a dissolving tank (1) to which powder of spent nuclear fuel is supplied, an agitating member (3) rotatably disposed in the dissolving tank; and rise inhibiting means, disposed in the dissolving tank above the agitating member, for inhibiting the powder from swirling and rising due to the rotation of the agitating member. The rise inhibiting means is composed of a plurality of fixed blades (11) for causing the powder which would otherwise swirl and rise due to the rotation of the agitating member to move downward. The fixed blade has a descending slope with respect to a swirling direction in swirling and rising. This dissolving apparatus effectively prevents the non-dissolved particles from overflowing, thereby providing improvement in the speed with which spent nuclear fuel is reprocessed and in the ability to carry out the nuclear fuel cycle process.